



PARSONS

Facility Kickoff Meeting: Portland ANGB

Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations

W9133L-18-F-0052

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11.07.18



Agenda

- Introductions
- Program Overview
- Portland-Specific Technical Discussion
- Questions/Discussion

Introductions

Our Core Values



Safety

As an industry-leading provider of high-value technical and management solutions, we are firmly committed to maintaining a safe and healthy environment in all of our offices and on each of our projects.



Integrity

We uphold our reputation for integrity in the marketplace and provide an ethical work environment for all of our employees. We will do the right thing each time we face a tough decision.



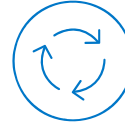
Innovation

Through inventive processes and unique solutions, we provide unmatched value to our customers. We foster creative work environments where we always challenge ourselves to improve our processes and procedures.



Quality

We are committed to providing high-quality services and products. We meet the mutually agreed-to requirements the first time and strive for continuous improvement of our work processes.



Sustainability

In all that we do, we are conscious of the impact that our work has on the environment. We help our customers do the same by providing clean, efficient, healthy, and effective solutions on all of our projects.



Diversity

We pursue diversity in our workforce, our markets, and our services because we recognize that optimum solutions require different backgrounds, new perspectives, and open minds. We leverage diversity through inclusion of employees, empowering them to shape the future of the corporation through collaboration and innovation.

Parsons Environmental Capabilities



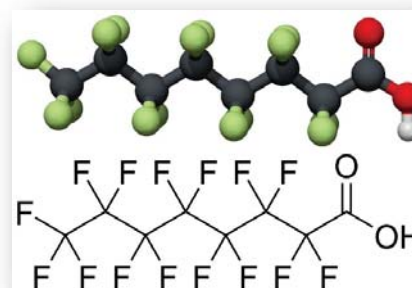
HTW Investigations

Complex site characterization and investigations of a wide array of environmental contaminants of concern



Bench Scale and Pilot Scale Testing

In-house treatability laboratory located in Cleveland, Ohio provides high value first step to achieve complex project goals



HTW Remediation

Ex-situ and In-situ expertise for traditional and emerging contaminants of concerns, including PFOS/PFAS

$$\text{Risk} = \frac{\text{EPC} \left(\frac{\text{mg}}{\text{kg}} \right)}{\text{RSL}_c \left(\frac{\text{mg}}{\text{kg}} \right)} \times \text{TR}$$

$$\text{Hazard Quotient} = \frac{\text{EPC} \left(\frac{\text{mg}}{\text{kg}} \right)}{\text{RSL}_{nc} \left(\frac{\text{mg}}{\text{kg}} \right)} \times \text{THQ}$$

Risk Assessments

HTW, MEC and CWM contaminant human health and ecological risk assessment performed at hundreds of sites



MEC Investigations and Remediation

Intrusive investigations and remediation on land and underwater



Geophysical Services

Geophysical mapping and advanced classification (DoD accredited)



PDM8®

Parsons Digital Mapper Model 8 is a safe and efficient proven solution for challenging environments



Drone Surveys and Mapping

Planning, implementation, processing, and evaluation using sUAS certified pilots and processors

The Parsons Portland Team



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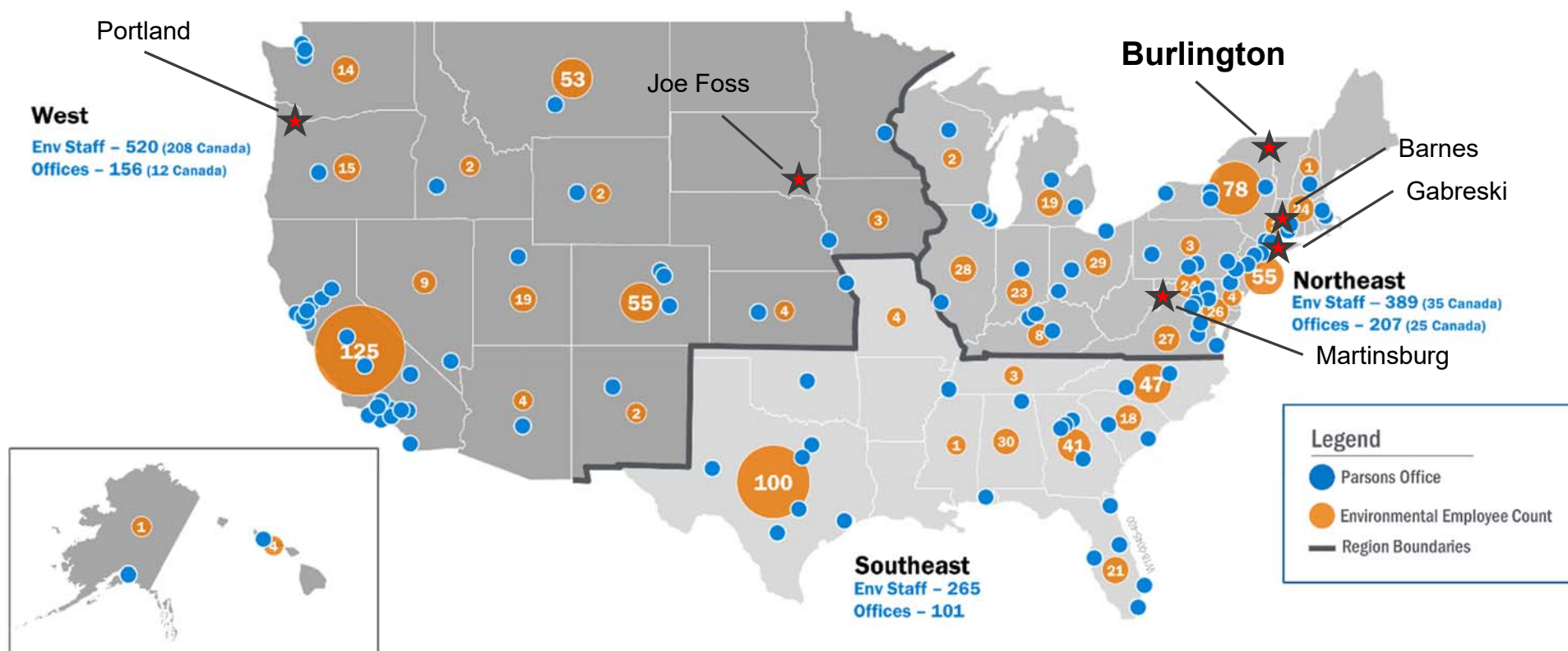
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Program Overview

Expanded Site Inspections for PFAS at Six Air National Guard Facilities

Parsons' Office Locations and Employee Count



Project Overview

- Work Includes 6 Installations
 - Barnes ANGB, MA
 - Burlington ANGB, VT
 - Gabreski ANGB, NY
 - Joe Foss Field ANGB, SD
 - Martinsburg ANGB, WV
 - Portland ANGB, OR
- POP
 - September 28, 2018 – September 27, 2020
- Preliminary Plans
- Community Relations
 - Community Involvement Plan Update
 - Restoration Advisory Board
- ROEs
- Project Update Meetings
 - Quarterly
 - Installation
 - Regulatory
 - Public Meetings / Restoration Advisory Board
- 12 Tasks
 - Task 1: Kickoff Meeting
 - Tasks 2-7: Installation-Specific Tasks
 - Task 8: Monthly Progress Reports
 - Task 9: ERPIMS
 - Task 10: Annual Well Inventory
 - Task 11: GIS
 - Task 12: CMRA

General Scope of Work

- Primary objectives of Expanded Site Inspection (ESI) for Per- and Polyfluoroalkyl Substances (PFAS)
 - Determine the presence or absence of PFAS in groundwater, surface water, storm water, soil, and sediment
 - Determine if complete pathway to downgradient receptors exists
- PFAS sample/analysis collection methods
 - Permanent monitoring wells (co-located wells in OR)
 - Soil and groundwater (GW)
 - Surface water (SW) and sediment
 - Equipment decontamination
- Federal and state-specific PFAS action levels
- IDW management

ANGB	Total PRLs	PROPOSED NUMBER OF ANALYTICAL SAMPLES BY MEDIA											
		Solid						Aqueous					
		Soil (Delineation)	Surface Soil (Airborne Investigation)	Sediment	QC samples	Rush	Site Total with QC	GW	SW	Storm Water	QC samples	Rush	Site Total with QC
Barnes, MA	6	20	12	19	11	6	62	118	19	9	30	15	176
Burlington, VT	5	0	25	30	11	6	66	86	30	10	26	13	152
Gabreski, NY	17	12	20	35	14	7	81	82	35	20	28	14	165
Martinsburg, WV	10	16	30	24	14	7	84	104	24	20	30	15	178
Joe Foss, SD	12	24	36	24	17	9	101	120	24	18	33	17	195
Portland, OR	10	20	30	15	13	7	78	72	15	14	21	11	122

Project Management Topics

- Communications
 - NGB – Thomas Bagnell and Aubrey Higginbotham
 - Portland ANBG – Roger Rein
 - Oregon DEQ – Dan Hafley
 - Public Outreach
- Coordination
 - Base and flight line access requirements
 - FAA permits
 - Work hour limitations
 - ROEs for offsite locations
 - On-base utility locates
- Information Received
 - Stormwater management plans and infrastructure maps
 - Historic documents
 - Existing GIS data, including utilities
 - Port of Portland Fire Training Facilities reports
- Other Information Needed
 - Existing ROEs

Portland-Specific Technical Discussion

General Investigation Strategy

- Triad-Based and Flexible:
 - Investigations will be conducted rapidly and in one mobilization focusing on:
 - Extensive pre-planning
 - Site reconnaissance during kickoff meetings
 - Site conceptual model development during the work planning phase
 - Select rapid turn analyses
 - Field electronic data collection and real time QA
 - Online access to data for NGB and Agency staff
 - Using data as we collect it to steer future sampling locations

Parsons Field Electronic Data Collection Form

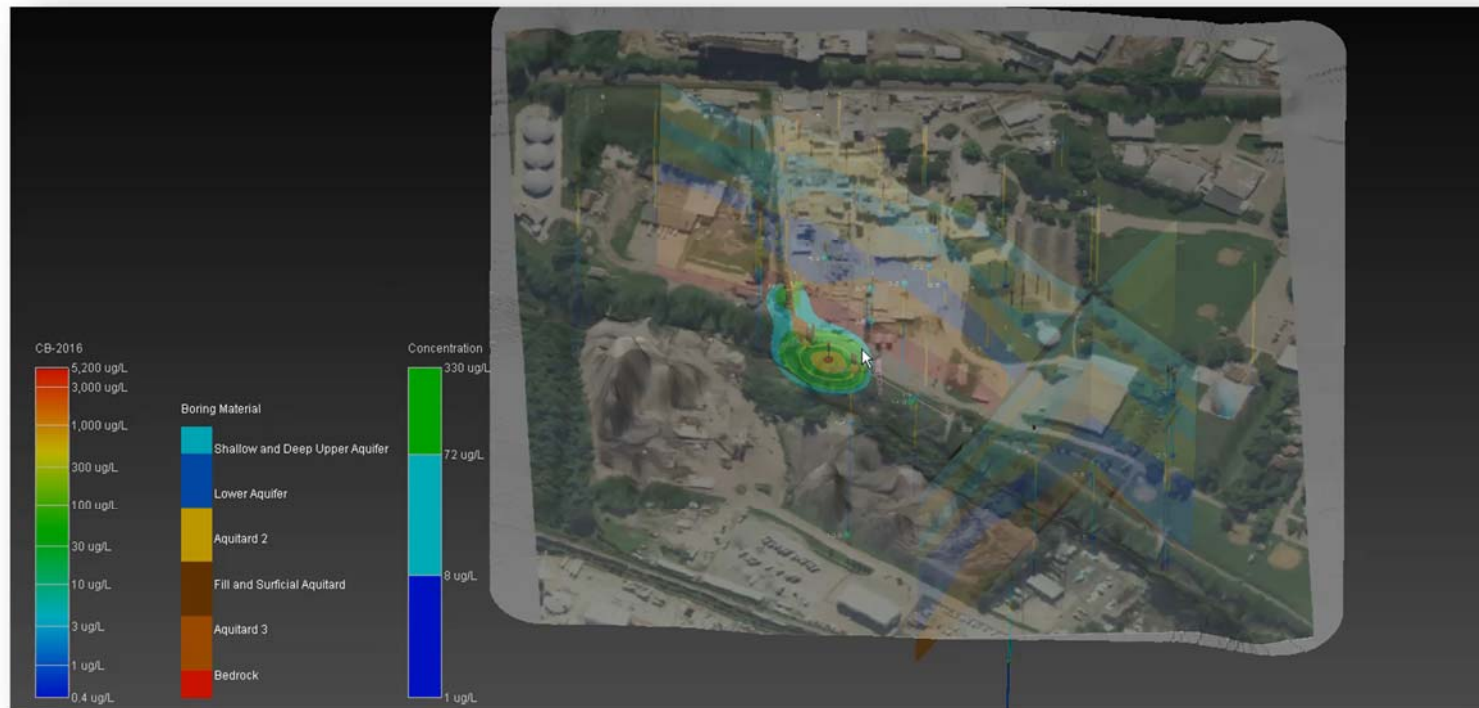
Initial Data		Low-flow Readings			Review/Upload
Low-flow Readings					
Purging Data Entry					
Purge Time	Water Level	pH	DO	REDOX	Turbidity
17:28	3.500	5.000	5.000	5.000	12.000
17:34	5.200	3.000	1.000	12.000	13.000
17:37	5.300	5.000	5.000	5.000	5.000
17:37	4.000	6.000	5.000	5.000	5.000
17:38	3.000	5.000	2.000	5.000	5.000
<div>Add New Row</div>					
Stabilized Parameters					
pH				Not Stable	Stable
3 Readings Criteria +/- 0.1 pH units					
DO				Not Stable	Stable
+/- 10% when 3 Readings > 0.5 mg/L					
REDOX				Not Stable	Stable
3 Readings Criteria +/- 10 mV					
Turbidity				Not Stable	Stable
3 Readings Criteria +/- 10% when greater than 1 NTU					
EC				Not Stable	Stable
3 Readings Criteria +/- 3%					
Temperature				Not Stable	Stable
3 Readings Criteria +/- 3%					

Parsons Online Dashboard

The image shows two views of the Parsons Online Dashboard. The top view is a mobile app interface with fields for 'New Address or Lookup Address', 'Enter Address # and wait to select Address', and 'Collecting New Info or Updates'. It includes buttons for 'Lookup Address', 'New Address', 'Search', 'Menu', and 'Update'. Below these are sections for 'Resident Information', 'Resident Address Details', and 'Resident Contact'. The bottom view is a desktop 'Residential Field Survey - Executive Dashboard' dated 3/29/2018. It features a map with sampling locations, a table of survey data, and summary statistics: 509 (Count of Results), 511 (Count of Samples), 899 (Sum of Results), 710 (Count of Results), and 1340 (Count of Results).

General Investigation Strategy

- Real-time data analysis
- Advanced analytics and communications tools to support real time decision making
- Strong communication and regular web based technical meetings to ensure that everyone is on board and to make decisions as a team

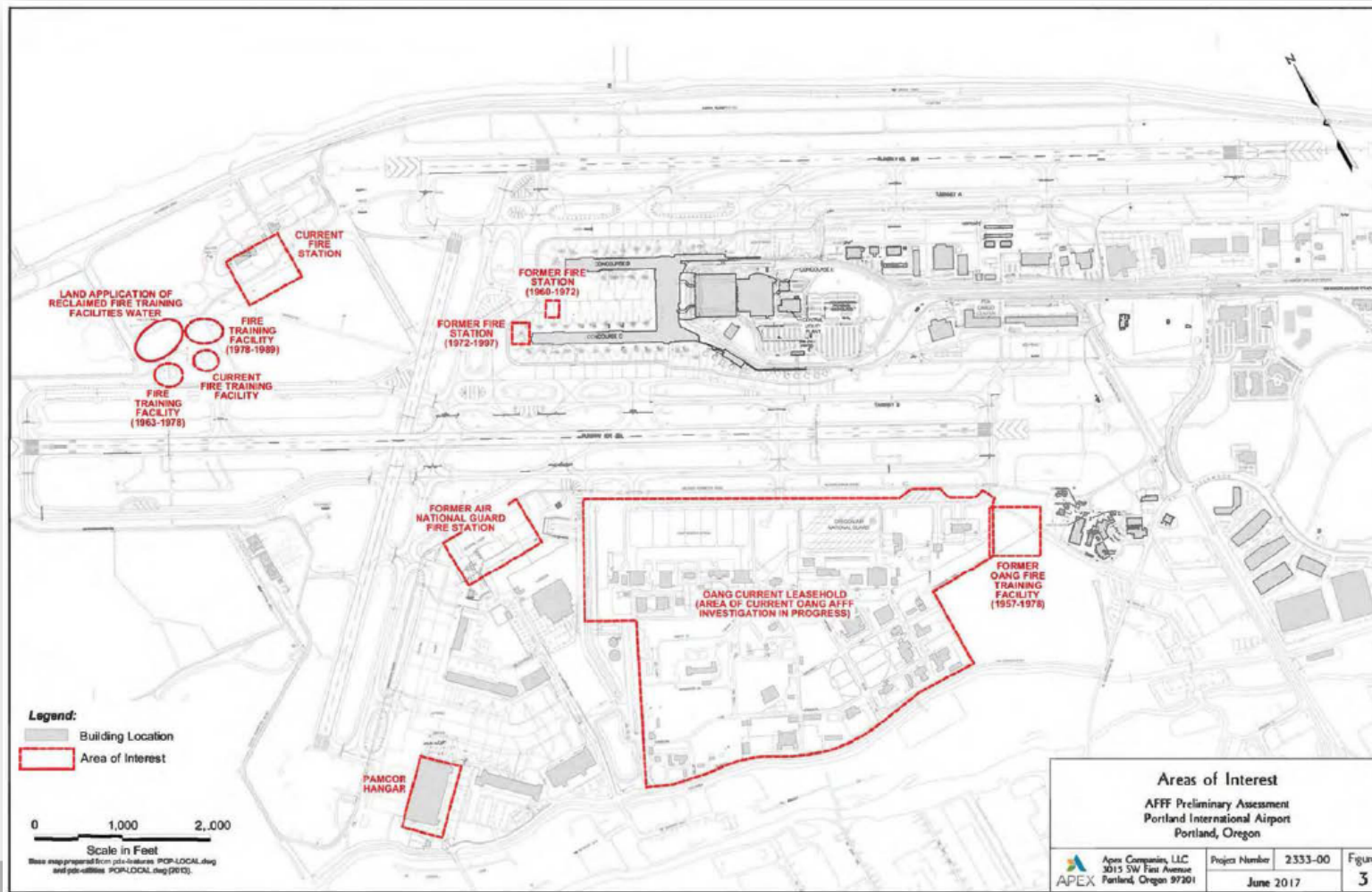




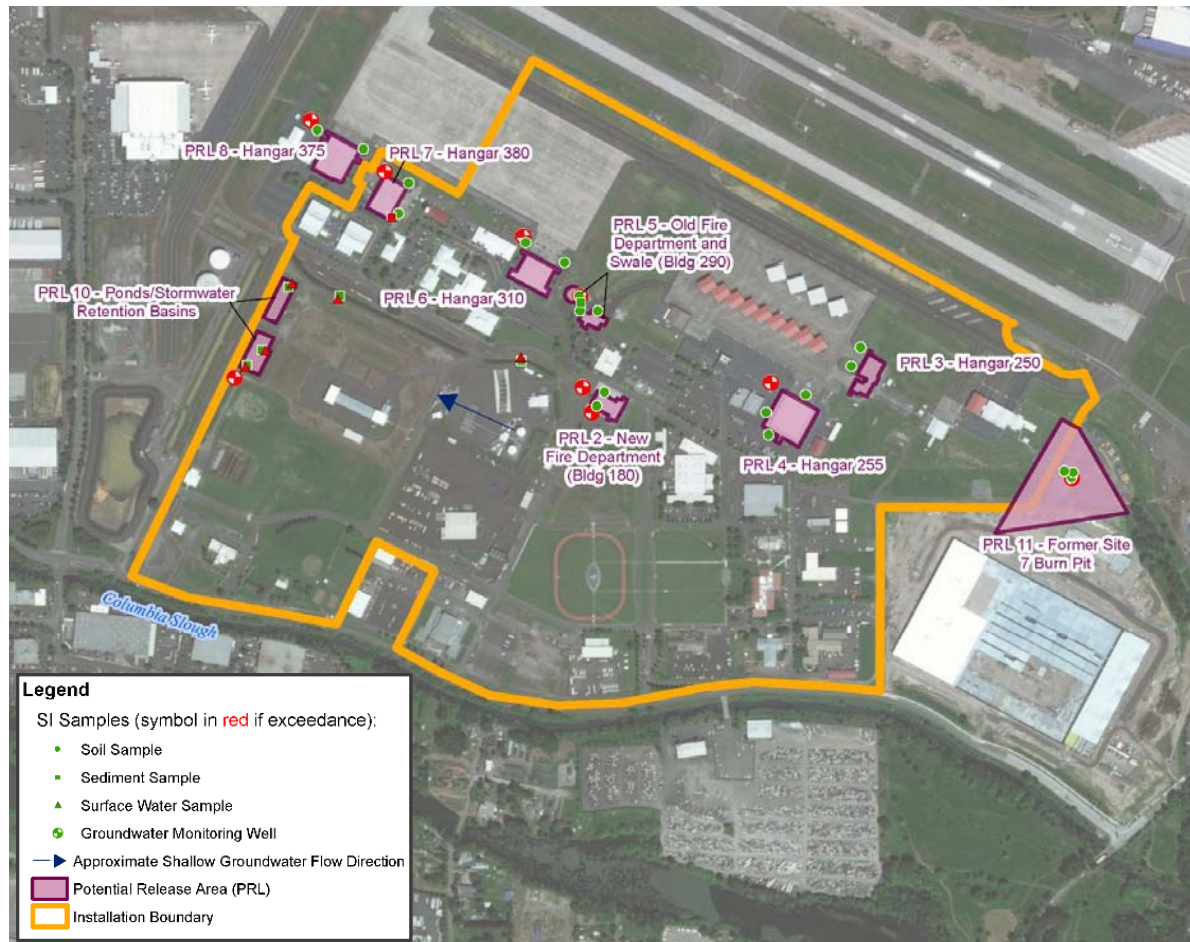
Portland ANGB, OR – Site Background

- Located in Portland, Oregon adjacent to Portland International Airport (PDX)
- Regulatory agency is Oregon Department of Environmental Quality
 - USEPA Health Advisory (HA) for PFOS and/or PFOA in drinking water
 - USEPA Residential Screening Level (RSL) for PFBS in tap water
 - Calculated screening values for PFOS, PFOA, and PFBS in soil and sediment
 - State-specific initiation levels for surface water as guidance only
- SI conducted at 9 potential release areas (PRLs)
 - Results report currently in Draft Final stage
 - Detected levels of PFAS at all PRLs
 - Further investigation recommended at all PRLs - upgradient and downgradient
- Parsons understanding of community and regulatory concerns
 - Potential for impact to Overbank Deposits (OD) and Columbia River Sand Aquifer (CRSA)
 - Potential for impact to Portland Water Bureau drinking water aquifer (Columbia South Shore Well Field)
 - Potential for impact to Columbia Slough

Portland ANGB, OR – Adjacent AFFF Areas of Interest



Portland ANGB, OR – Summary of SI Results



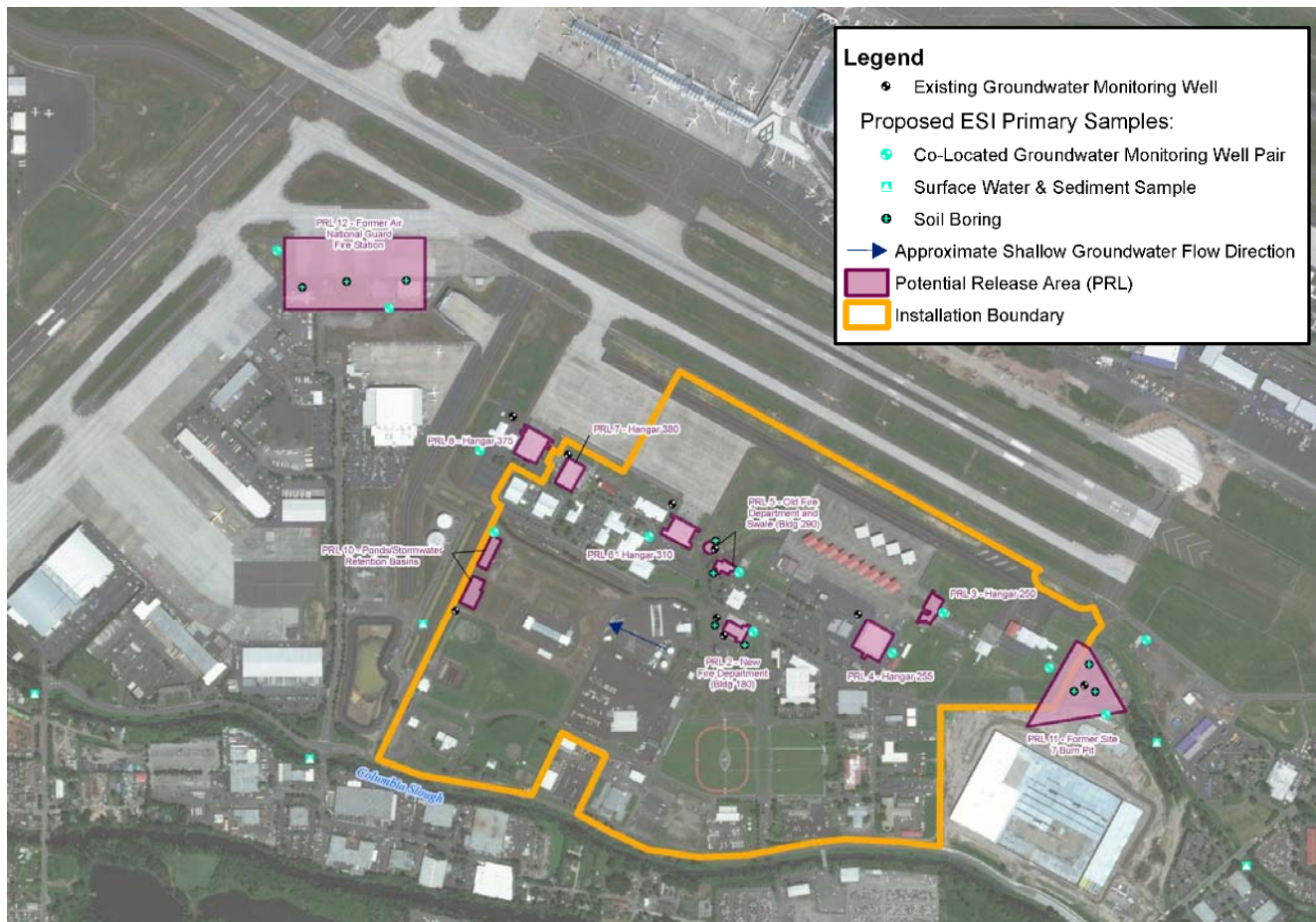
• Impacts reported at 9 PRLs

- Soil below screening levels in all samples
- Sediment above screening levels in one sample
- SW above screening levels in all samples
- GW above screening levels in all samples

• Recommendations

- Develop conceptual site model
- Soil and sediment samples for expanded list of PFAS
- Expanded GW sampling program, including upgradient and downgradient of base
- SW and sediment sampling, including upgradient and downgradient of base

Portland ANGB, OR – Preliminary Proposed ESI Approach



- Further investigation at the 9 PRLs of the SI
- Investigation at Former Air National Guard Fire Station
- Investigate soil sources
 - Collect up to 20 samples
- Upgradient/downgradient GW investigation of both OD and CRSA
 - Install up to 28 MWs
- SW and sediment samples focused on PRLs 5, 7, and 10 and downgradient
 - Collect up to 15 sample pairs
- Investigate storm water runoff
 - Collect up to 14 samples
- Assess potential for airborne transport and deposition
 - Collect up to 30 surface soil samples

Portland ANGB, OR – Path Forward



- Installation kickoff meeting and site reconnaissance
 - November 6-7, 2018
- Work Planning
 - Draft ESI WP – end of December 2018
 - To include UFP-QAPP, SSHP/APP, IDW Management Plan
 - Project update/regulatory meeting after submittal of Draft Final WP
 - CIP
 - ROEs and FAA permits
- Field Work
 - Summer/Fall 2019
 - Data management will be ongoing
 - Frequent web-based meetings during field work
- Reporting
 - Draft ESI report within 90 days of completion of field work

Questions/Discussion
